

BIO392 survival project

# Sarcoma

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# sarcoma

- *malignant tumor of mesenchymal origin*
  - bone sarcoma
  - soft tissue sarcoma
- **symptoms** depend on tumor location
  - generally: local swelling & pain
- **diagnosis:** X-ray, CT, MRI, biopsy + analysis, ..
- **treatment** depends on grade and location
  - surgery, chemotherapy, radiation therapy, ..

# prognosis

- **factors:**

- tumor size
- local tumor spread
- metastases
- tumor grade
- tumor location
- mitotic rate

- **5-year survival:**

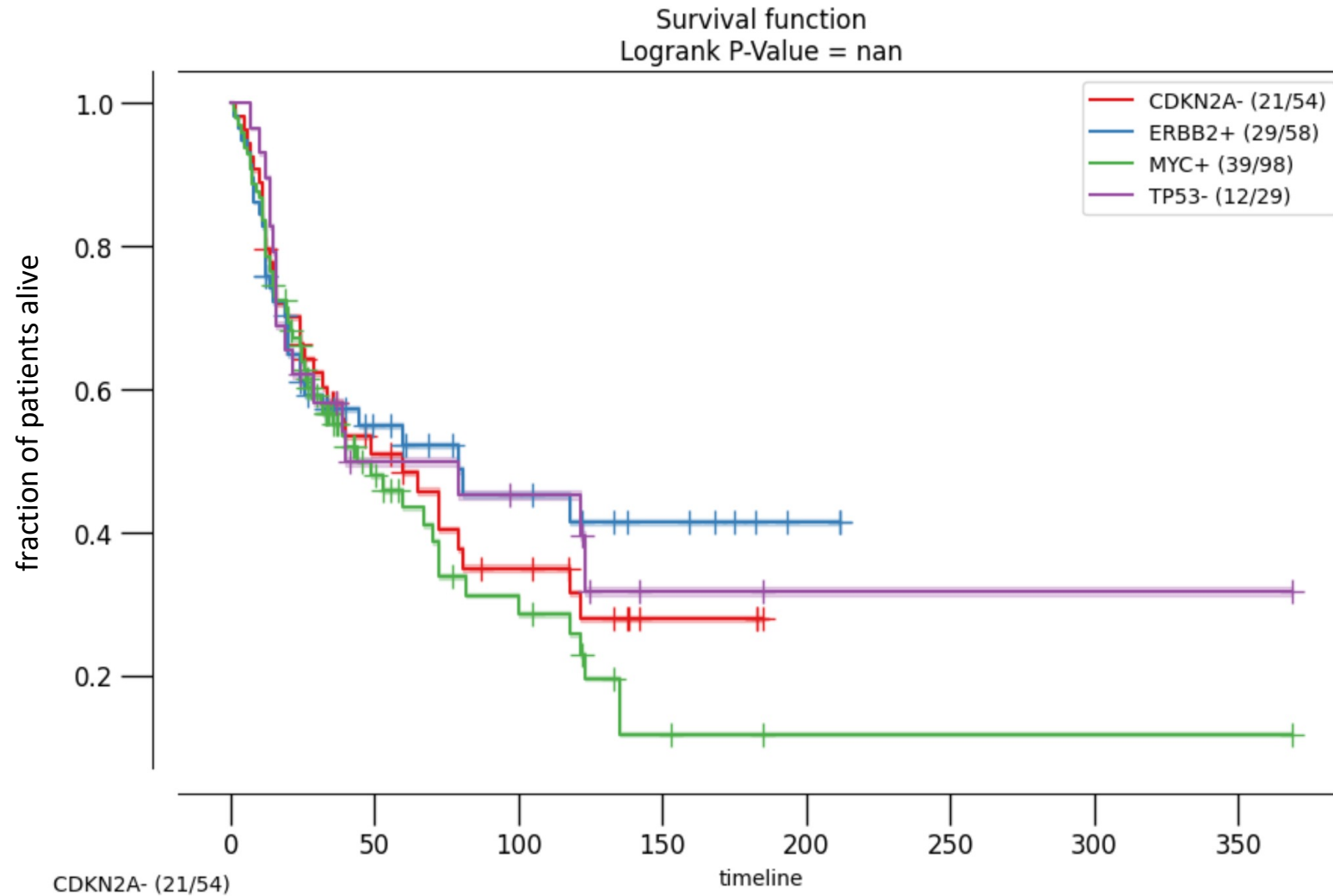
- bone sarcomas: 67.4%
- soft tissue sarcomas: 65.4%

# queried genotypes

- ERBB2+ = cnv gain of ERBB2
  - ERBB2: oncogene on chr17
- TP53- = cnv loss of TP53
  - TP53: tumor supressor gene chr17
- MYC+ = cnv gain of MYC
  - MYC: oncogene chr8
- CDKN2A- = cnv loss of CDKN2A
  - CDKN2A: tumor supressor gene chr9

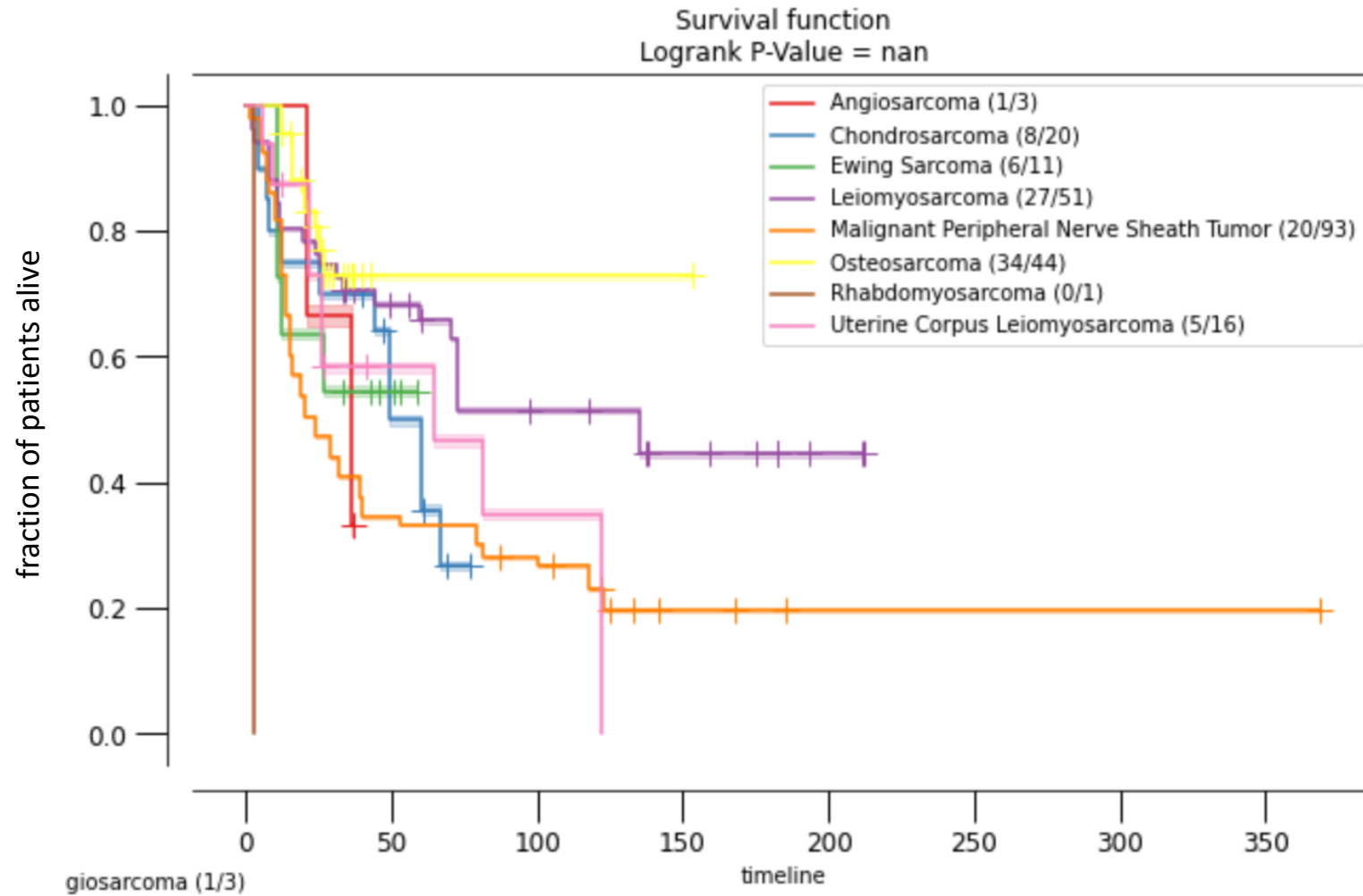
Does the survival of sarcoma patients depend  
on the genotype?

# Kaplan-Meier plot vs. genotype



Does the survival of sarcoma patients depend  
on the tumor type?

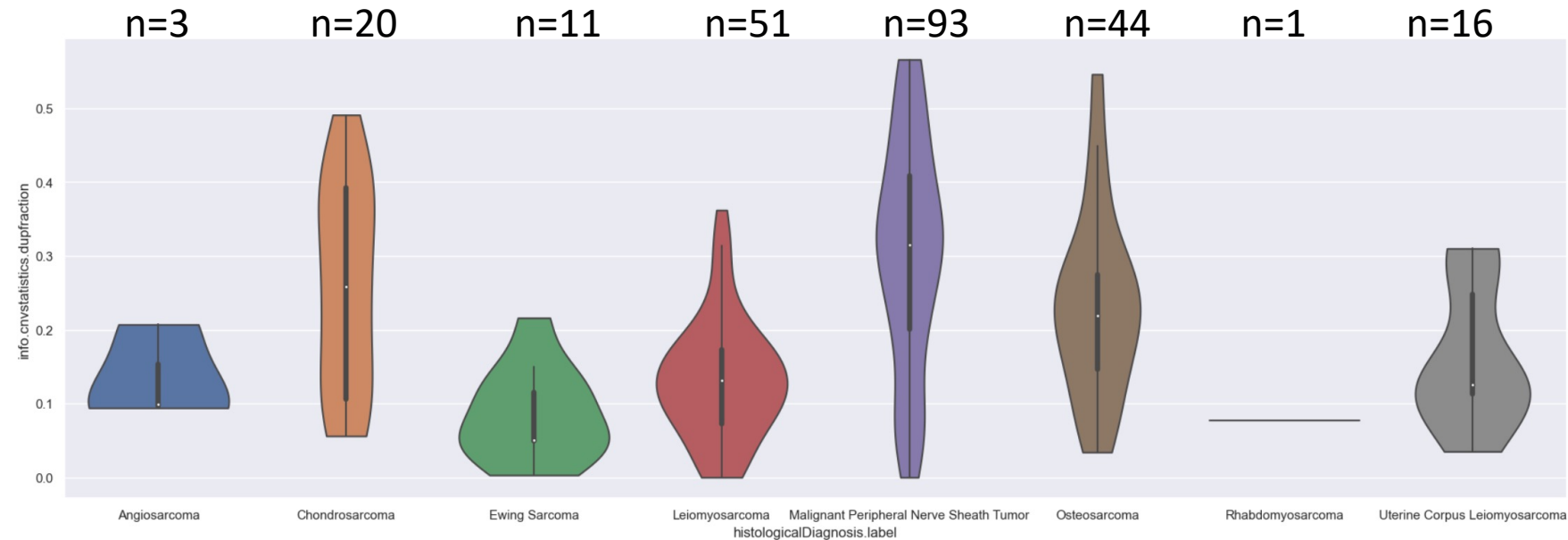
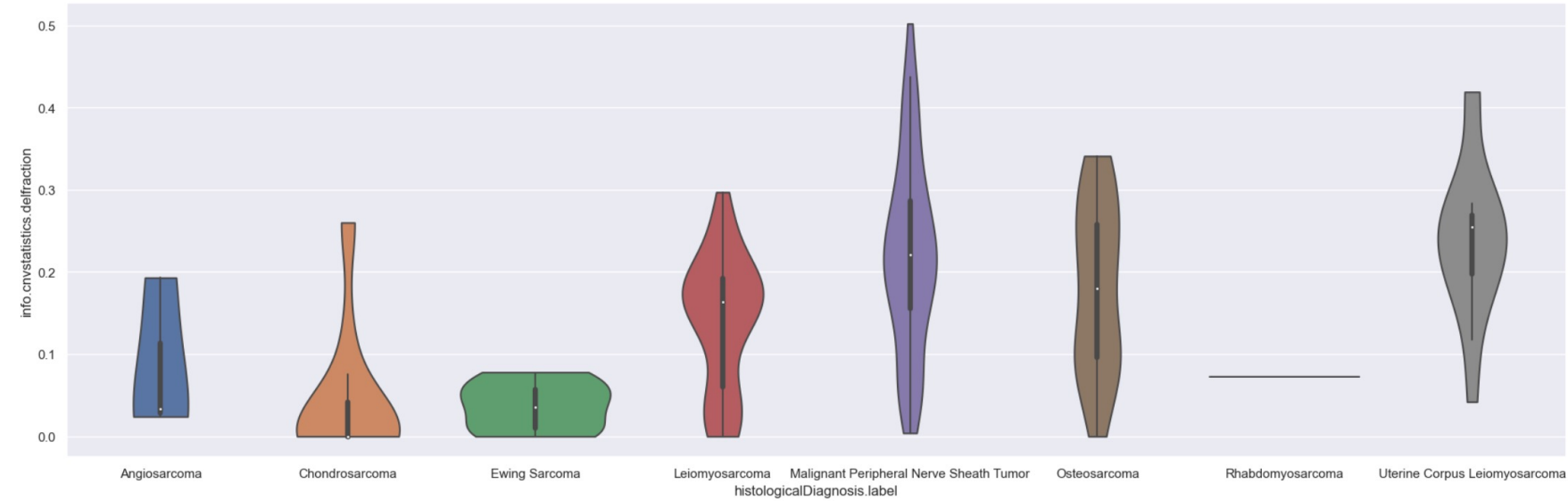
# Kaplan-Meier plot vs. different tumors





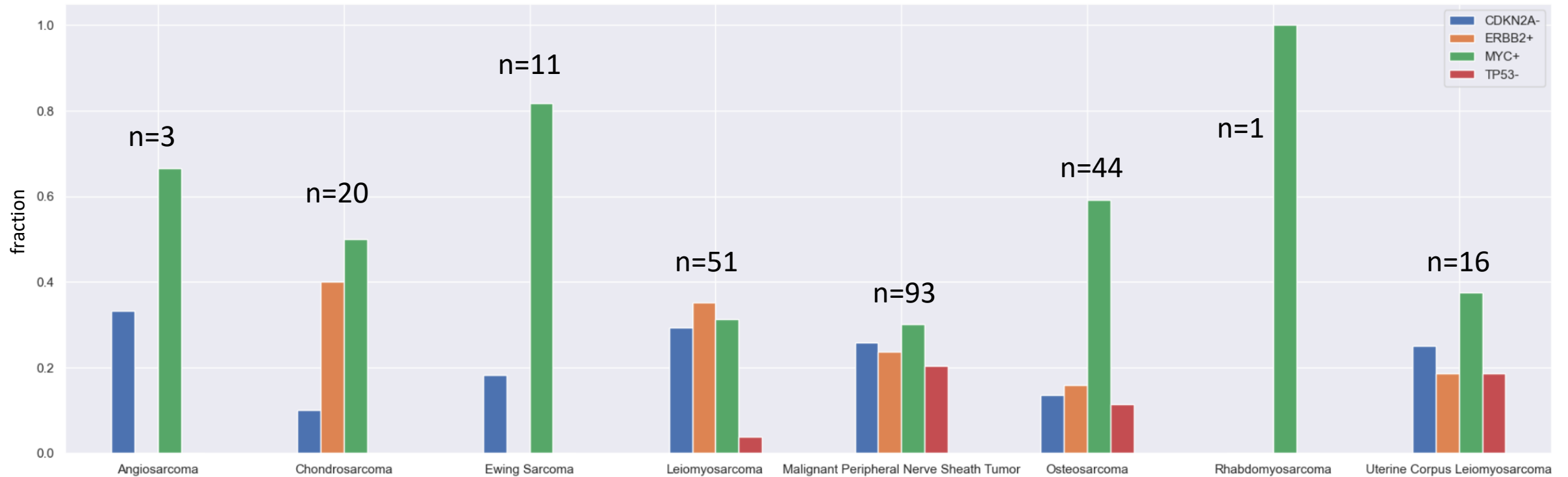
Does the duplication/deletion fraction of the genome depend on the tumor type?

# del-fraction(top) dup-fraction(bottom) vs. tumor type



Do the genotypes of the tumors differ?

# mutated genes vs. tumor type



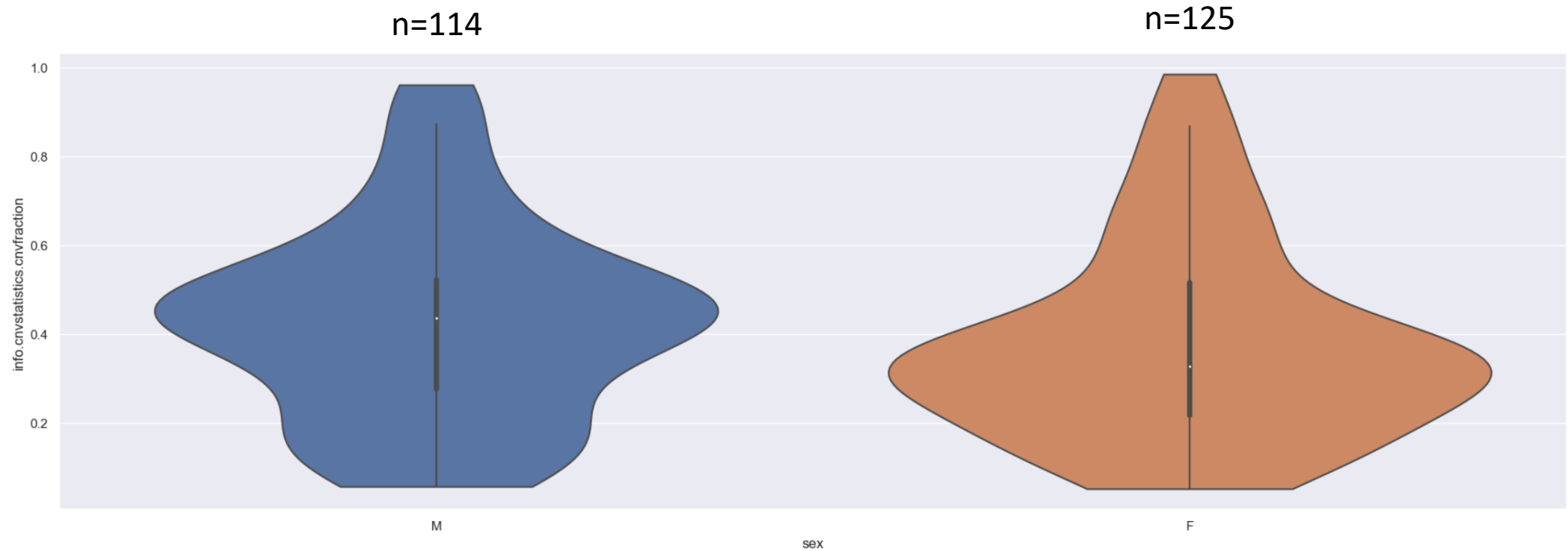
Do the genotypes of the tumors differ?

too few samples

Osteosarcoma seems to be associated with MYC+

Is the cnv fraction of the genome correlated  
sex?

# CNV-fractions and sex



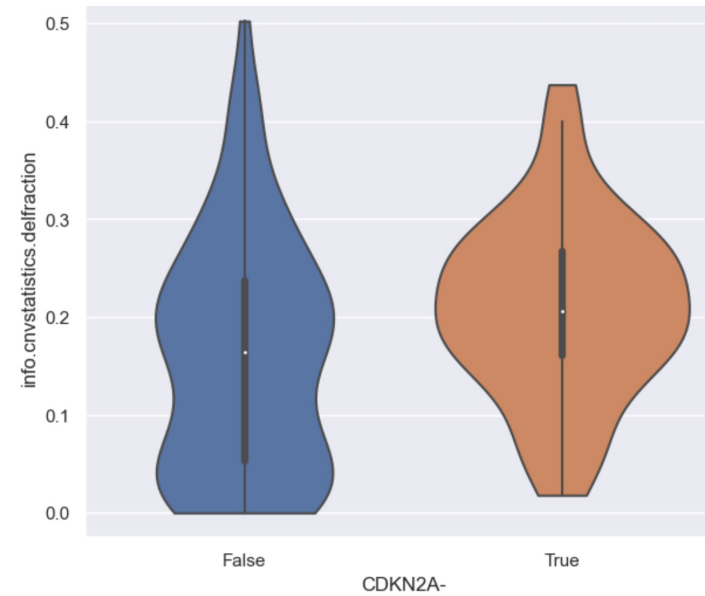
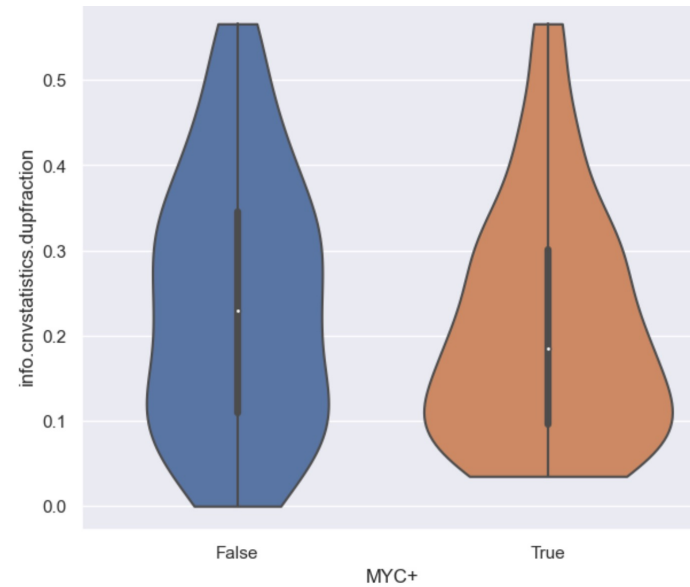
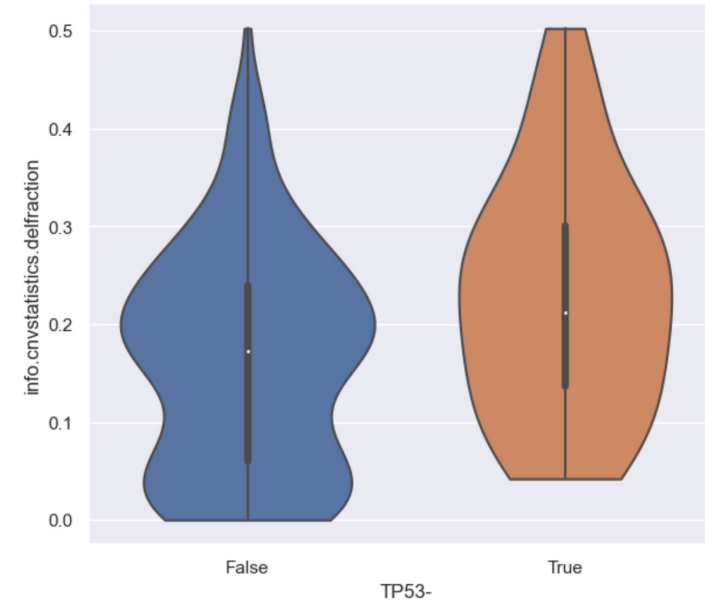
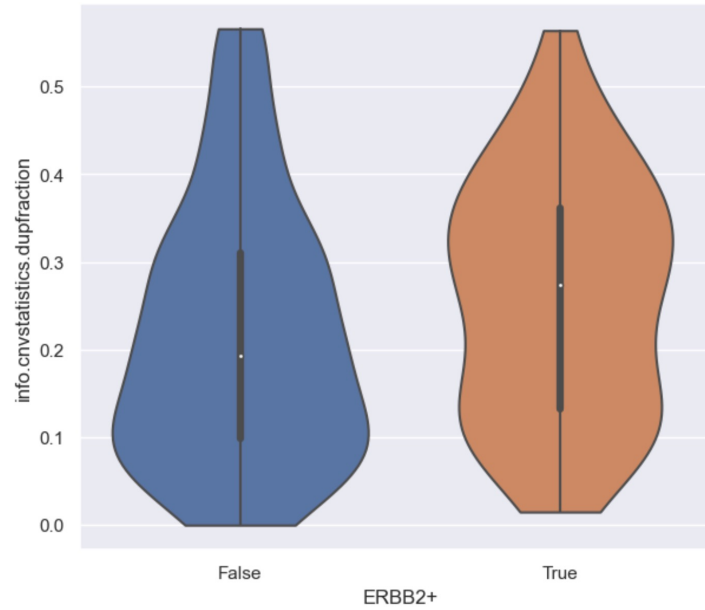
Is the cnv fraction of the genome correlated sex?

no.



Is the duplication/deletion fraction of the genome correlated with our genotypes?

# genotype vs. control



Is the duplication/deletion fraction of the genome  
correlated with our genotypes?

no.

If you have any questions, please drop us an [email](#)

au revoir



# SOFT TISSUE (STS) AND BONE SARCOMAS

## **Fibrosarcoma**

*Infantile or Adult*  
Fibrous connective tissue

## ***Synovial sarcoma***

Connective tissue

## **Desmoplastic small round cell tumour**

Soft tissue of abdomen

## **Malignant peripheral nerve sheath tumour**

Nerves

## **Leiomyosarcoma**

Smooth muscle

## **Rhabdomyosarcoma**

*ARMS or ERMS*  
Skeletal muscle

## **Liposarcoma**

*Myxoid or WD/DDLPS*  
Adipose tissue

## ***Gastrointestinal stromal tumours***

Gastrointestinal tract

## **Osteosarcoma**

Bone

## ***Ewing's sarcoma***

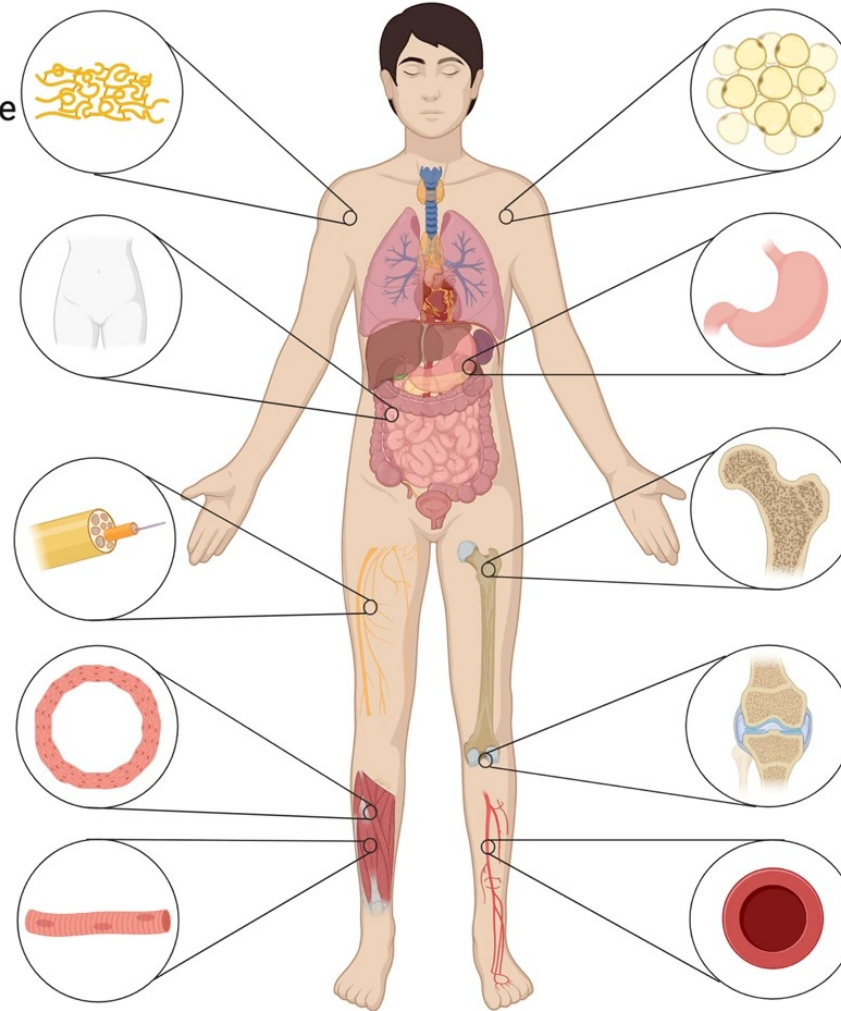
Bone or STS

## **Chondrosarcoma**

*Myxoid or other*  
Cartilage

## **Angiosarcoma**

Blood vessels



Does the survival of patients depend on the tumor type?



# Kaplan-Meier plot of Malignant Peripheral Nerve Sheath Tumor vs. genotype

